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SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *American Journal of Psychology*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Int. J. E.* = *International Journal of Ethics*; *Phil. Stud.* = *Philosophische Studien*; *Rev. Ph.* = *Revue Philosophique*; *R. I. d. Fil.* = *Rivista Italiana di Filosofia*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Ps. u. Phys. d. Sinn.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*; *Phil. Jahr.* = *Philosophisches Jahrbuch*; *Rev. de Mét.* = *Revue de Métaphysique et de Morale*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*.—Other titles are self-explanatory.]

LOGIC AND METAPHYSICS.

Introduction à la métaphysique. H. BERGSON. *Rev. de Mét.*, XI, 1, pp. 1-36.

Metaphysical definitions show that there are two profoundly different ways of knowing a thing. One depends upon symbols and is relative, the other is independent of symbols and may become absolute. Intuition is the kind of intellectual sympathy by which we are carried into the interior of an object so that we coincide with its unique and inexpressible character. Analysis, on the contrary, refers the object to elements which are already known, that is, which the object has in common with other objects. Analysis multiplies without ceasing the points of view, in order to complete a representation which nevertheless remains incomplete; but intuition is a simple act. The positive sciences aim at analysis, metaphysics professes to go beyond symbols. We know by intuition only the self in its flow through time. Besides perceptions, memories, and tendencies, we have a self which is at once a variety of qualities, a continuity of progress, and a unity of direction, and which cannot be represented. The intuition may be suggested by properly selected images, but it cannot be expressed in conceptual representations. Unity and multiplicity give an external view; but, whether separated or united, they cannot penetrate to the duration of the self. Science, by analyzing, substitutes for the self psychological facts which are elements but not parts. We need not hope to construct that self by operations with its symbolical elements. This has been the error of both false empiricism and rationalism. The first attempts to find the self in the interstices of psychological states; the second, as the place of those states. In the former case, the self approximates toward zero; in the latter case, toward infinity. A true empiricism will seek for the real nature of the unity, multiplicity, and reality of the self. While practical thought tries to know, not for the sake of knowing, but to satisfy an interest, *i. e.*, goes from concepts to things, a real metaphysic inverts the process and passes from things to concepts. To determine where intuition ends

and analysis begins, we must look to the self, to the flowing of that which endures. Psychological elements are static, the parts of the self are variable. Analysis deals with the unchanging, intuition refers to the moving. In the attempt to conceive spatial movement in terms of fixed positions, we find an example of the limit of analysis. But to think that philosophy is confined to the contemplation of the self is to misunderstand the nature of the self. While the logical ideas of unity and multiplicity reduce concrete reality to an abstraction, the intuition of our own duration places us in touch with a continuity of durations. There is an external reality given directly to our minds, and that reality is mobility or tendency. Modern science began when Galileo resolved to study movement in itself, instead of searching the principle involved in the concepts high and low. Modern philosophy also has had the feeling of the moving continuity of reality ; but forgetting sometimes, *e, g.*, in Kant, that an essential characteristic of metaphysics is freedom from symbols, it has driven metaphysics and science to the extreme limit of symbolism. The Kantian criticism does not apply to philosophical doctrines in so far as they are intuitional. Intuition is nothing mysterious ; every one exercises it to a certain extent. Metaphysical intuition, however, is only possible after a thorough acquaintance with philosophical concepts, and, to take the particular case in hand, an adequate intuition of the self must be consecutive to a great number of psychological analyses.

N. E. TRUMAN.

A Compendious Classification of the Sciences. T. WHITTAKER. *Mind*, 45, pp. 21-35.

In order to complete systematically Comte's classification of the sciences — arranged in the order : Mathematics, astronomy, physics, chemistry, biology, sociology, morality — several corrections are first necessary. Astronomy is too concrete to belong to the fundamental series ; animal psychology, instead of being a subdivision of biology, deserves a separate place ; and human psychology, substituted for morality, better expresses Comte's meaning. Again, formal and material logic must be inserted before mathematics, and metaphysics after the higher psychology. This amended list is best represented diagrammatically in the form of a circle, rather than a straight line. For metaphysics — speculatively, if not didactically — precedes logic ; and both these extremes are subjective. The determinations of this series are consequent one upon another. Epistemology furnishes the confirmation of the laws of thought, whose availability is absolutely dependent upon the existence of an order of which they by themselves contain no assertion. Material logic provides the (essentially synthetic) principles peculiar to mathematics. Upon intuitive construction, but never upon mere analysis of concepts, recognition of the truth of a mathematical proposition results from a single act of comparison. With the fact of nature's uniformity once proclaimed in the laws of conservation and causation, physical science becomes possible. To-day rationalism

and experientialism almost approach unanimity in their mutual concessions regarding the subjective grounds of this uniformity. According to the incontestable portion of Kant's mathematical doctrine, mechanics must be separated from mathematics and made the foundation of physics. For the idea of a moving mass, fundamental in rational mechanics, is non-essential in connection with pure mathematical assumptions, which can be treated as merely spatial and numerical determinations. Since the actual qualitative differences between phenomena cannot be annulled by showing that they are accompanied by modified arrangements of simple particles, physics can never supplant chemistry. Both are involved yet transcended in biology, whose problem deals with the 'immanent end' or consensus of functions manifested by living organisms. Animal psychology, introducing the method of introspection, treats of mental synthesis in general previous to the formation of the concept. Combining the results of the two preceding sciences, sociology advances to a study of the relation between organisms that live in community and become capable of intellectual converse. Finally, human psychology, through its investigations of emotion, will, and thought, leads directly to ethics, practical philosophy, and metaphysics. Comte's classification is exceedingly valuable in that it shows clearly how the sciences, in their ideal order, form a single organism of knowledge to which each is subservient.

ANNIE D. MONTGOMERY.

The Absolute as Unknowable. A. K. ROGERS. *Mind*, 45, pp. 35-47.

This paper considers Mr. Bradley's substitution of a purely hypothetical synthesis for the neo-Hegelian identification of reality with thought or knowledge. Not only, it is objected, is life more than thought, but thought does not in itself supply an intelligible unity. It indicates but never reaches such a unity, since it involves a separation of the *what*, or idea, from the *that*, or existence. Accordingly, (1) thought is not absolute because essentially relational, and (2) the true absolute is, for us, unknowable. To this latter statement, and also to the subsequent postulate of a single inclusive experience as the ultimate unity, Mr. Rogers takes exception. The facts of experience, as *we* feel them, must either be denied, or taken as only *known by*, not existing in, the final experience. To prove the possibility of knowing reality, and at the same time to offer an adequate explanation of the nature of the absolute, it is only necessary to show that in knowledge, as such, is implied the separate factual existence of the thing known, distinct from the experience of knowing. An object is not revealed to us by the actual presence of a part of it in our momentary feeling. This feeling is, indeed, the instrument of knowledge, but has no part in the meaning of the judgment passed. Anything new which is ascertained about a familiar thing appears, in the *process of discovery*, as a unique relation which must be added to the reality previously known; but, as a matter of fact, we realize that the actual and completed thing existed

non-discursively prior to any judgment whatever. That is, sensations, perceptions, and feelings are duplicates, not integral parts, of experienced, extraneous objects. Now the true meaning which reality has for us is its relation to our own activities. Recognition of the end of action, and this alone, unites the whole act, and so whatever object enters into it, and thus saves the object from being regarded as a mere relational series. The thesis maintained is, accordingly, that in any conscious act of a non-discursive kind, our experience, while falling short of, nevertheless typifies, absolute experience. In this supposition of a cosmic unity of purpose, is found an explanatory monistic principle. My act is not lost or transformed in an eternal, all-engulfing consciousness, but is vitally connected with this consciousness by virtue of being known as a part of the universal purpose, albeit as itself and nothing else.

ANNIE D. MONTGOMERY.

The Problem of Natural Religion. JOSIAH ROYCE. International Quarterly, VII, 1, pp. 85-107.

The problem of natural religion is that of the possibility of attaining religious truth by appeal to the light of nature, unaided by revelation. The problem arises out of the apparent opposition between ideals and facts. Facts are objective, concrete somethings which, of their own nature, determine whether a given statement about them is or is not true. Ideals are subjective, and bear no determinate relation to the world of facts. An ideal is an idea that, from our point of view as believers in this ideal, *ought to be* a fact. Our religious consciousness looks for a realization of our ideals. Is there, then, a Being who is able and willing to give ideals determinate expression in the realm of facts, and whom we have a right to regard as himself a fact? The question is to be answered by examining the reasonableness of the physical world, *i. e.*, facts. Are these facts the embodiment of ideals, and do they present a sufficient agreement with ideal purpose to prove that some Being exists whose will they express? Modern scientific tendencies seem to oppose an ideal interpretation of nature. In earlier centuries, the orderliness of nature was regarded as a positive manifestation of divine purposes and designs. Kant, however, pointed out the invalidity of the claims of natural theology. Following Kant, came an active idealistic movement, which, in turn, as science advanced, gave way to more critical tendencies. The knowable was now the fact world as manifested in human experience; our insight was concerned solely with phenomena, never with ultimate truths. But is it true that our empirical acquaintance with the physical world is still too narrow and fragmentary to give us power to prove anything regarding the presence of ideals in or behind the world of facts? The search for law, the scientific construction of coherent systems out of the seeming chaos of raw experience, seem but to illustrate how, after all, the ideal may lie beneath the fact world. As Kant said, our human experience contains no ultimate facts. No man hath seen God; no man hath seen a single real, perfectly determinate fact.

Our very conception of a world of determinate facts is one of ideals. The fact, for our finite experience, is the ideal. Yet it does not follow that the facts of the universe lie beyond all experience, both human and non-human. The search for facts is a search for more definite experience. The search for the ideal is a search for a complete expression of some conscious process. The state of consciousness wherein all questions are determinately answered remains for us an ideal object of search. To say that the ideal is actually realized, and that such realization constitutes the very nature of the true universe, is to assert that there is, then, a consciousness for which all questions are answered. Now such a consciousness is a mind to which all reality, natural and spiritual, is present in a perfectly determinate and individual form. For any inquiring consciousness, facts remain ideal objects, sought but not yet fully found, limited in experience, and approached as one's experience becomes more determinate. To assert that such ideals are expressed in the real world, is to assert that the real world is present to a determinate and real experience. Such an experience has at least the character of divine omniscience, and has reality as its own present object. Moreover, in order to possess value as a determinate fact, an experience must embody an intention, must fulfil the purposes of a will. Mere presence in experience does not make the content determinate. Will is necessary to determine and give individuality to facts. The absolute will confirms or defeats finite ideals. The facts of the Absolute exist by virtue of its own absolute Will.

C. A. HEBB.

The Present Attitude of Reflective Thought towards Religion. HENRY JONES. The Hibbert Journal, I, 2, pp. 228-252.

Taking 'reason' in its ordinary sense, as equivalent to 'the intelligence,' we may say no age has employed reason more, nor trusted it less, than our own. We find the conflict between theory and practice hottest around the principles of our moral and religious life. Hence an intellectual skepticism has arisen through a failure to justify the faith that serves as a foundation for our practice. Now, to-day, it is said, we tend to overrate the rôle played by reason in human affairs. Reason is rather destructive than constructive. Even truth is esteemed too highly; it is merely a means and not an end. However, over against this condemnation of the philosopher, the popular instinct persists in placing the solid worth of our growing knowledge, especially in science. In this respect, we may say the present day is not skeptical. It is rather in the province of religion that the intellectual diffidence of to-day arises. Even here, however, we find a despair of a theory of morals and religion, rather than a skepticism. If men have tired of the official theology of the past, we still find them listening with reverence to the spiritual message of the poet. The very fact that poets dwell on these themes, and find God immanent in His world, proves that our times are not skeptical in spirit. Looking, too, at the works of the

present age, we find practical religion everywhere. The distrust rather lies with dry theology and speculative formulæ. What, now, are the consequences of this skepticism of intellect? One cannot compromise, and believe that religion is rational even though unintelligible. Hence we find both extremes; those who hold to religion, and those to whom the first concern is intellectual. Most men, however, halt short of these extremes. In looking over the general disposition of to-day, it will be seen that the present attitude of thought towards religion is essentially transitory. Neither side will allow compromise; each tendency is too fundamental and deep-rooted in the life of to-day. There was, however, introduced in the last century a new method of contemplating the facts in the natural world, and this has brought about a restatement of the whole problem of man's spiritual nature. Science has become cosmocentric, and, in this way, man has been despoiled of his uniqueness. The fact that man is what he is only in virtue of his ontological relation to the world, cannot now be questioned. Man is vitally united to his fellowmen in a rational society, and deep-rooted in the outward world of facts. The old conception of isolation was the basis of much of the religious conviction of the past. It is in this respect, therefore, that the problem of the ethical and religious life has become crucial in our day. Now all this would seem to point to the decay of religion and the undisputed rule of naturalism; but such a conclusion is intellectually false. If man's religious and moral interests have deepened *pari passu* with his intellectual growth, there is at least a possibility that it is not religion and reason themselves which are in conflict, but rather the theories of them, offered by the speculative thinker. Experience is not rent in twain. What we need is a better view of religion and a more sympathetic attitude of reason.

R. B. WAUGH.

HISTORY OF PHILOSOPHY.

The Place and Worth of Oriental Philosophy. JAMES LINDSAY. A. f. G. Ph., IX, 3, pp. 393-398.

The writer of this article is chiefly concerned with entering a protest against the general neglect of oriental speculation, from which he believes the occidental world has much to learn. In support of his contention, he instances certain ethical and philosophico-religious ideas of the Hindus, Egyptians, Persians, and Chinese, and while he does not assume any historical dependence of European speculation on the Orient, he insists that philosophy has a "more universal note to strike than the European one," that "woven of one warp and woof throughout as is the universe of thought, not without Asiatic philosophy can it be made perfect."

W. A. H.

Die Schilderung der Unterwelt in Platons Phaidon. OTTO BAENSCH. A. f. G. Ph., IX, 2, pp. 189-203.

In this article an attempt is made to give a detailed explanation of the closing myth in Plato's *Phædo*. The topography of Tartarus is exhibited

in diagrams and maps which interpret with the greatest possible distinctness Plato's conception of the nether world, and of the destiny of departed souls. In the light of this topography, the writer subjects the Greek text to criticism and revises Aristotle's *Meteorology*, II, 2 (in order to harmonize it with the Platonic account of the *Phædo*) by striking out οἶον εἰ πεῖν ἤρξαντο κάτωθεν, ἀνωθεν εἰσβάλλειν, which Baensch regards as an early gloss.

W. A. H.

The Ethical Philosophy of Marcus Aurelius. JAMES LINDSAY. A. f. G. Ph., IX, 2, pp. 252-258.

No attempt is made in this article to put into systematic form the disconnected paragraphs of the "Meditations," but a clear enumeration of the chief ethical ideas is given—ideas which, as Lindsay says, "made the Emperor the important connecting link between pagan and Christian thought."

W. A. H.

Die Entstehung der Philosophie Descartes nach seiner Korrespondenz. W. PFEFFER. A. f. G. Ph., IX, 1, pp. 1-26.

Pfeffer points out that the most important information regarding the development of the Cartesian philosophy is found in the *Discours* and the *Letters*. The main series of the latter begin with the year 1629. In the spring of 1629 Descartes retired to Holland, carrying out a resolution he had formed towards the end of 1628 to leave Paris and find solitude for the working out of his "new philosophy." On April 16, 1629, he was registered at the little University of Franeker in North Holland. At this time his correspondence shows that he was engaged on the metaphysics, for on April 15, 1630, he wrote Mersenne: "Les 9 premiers mois que j'ai été en ce pays je n'ai travaillé à autre chose (*sc.* qu'à la métaphysique)." Further, on November 25, 1630, he wrote Mersenne: "I do not say that I shall not some day complete a *petit traité de métaphysique* [published under the title: *Meditationes*] which I began when I was in Franeker." Further, about the end of July he became interested through Renieri in the observations of the Jesuit Scheiner on the Parhelia, which drew him away from his metaphysical studies, and in October and November of 1629 he was in active correspondence with the optician Ferrier, of Paris, on the questions of dioptrics and mechanics. By the end of 1629 he had already formed the plan of his work on physics, which he hoped to complete in three years, as he announced in April of 1630, and by November, 1630, he had chosen the title *Le monde*. In January, 1632, he sent the first part of his Dioptrics to Golius, Professor of mathematics at Leyden. News of the condemnation of Galilei (July 22, 1633) reached Descartes in November, 1633, at a time when he was in a mood of indecision about his work *Le monde*, and about the end of the year he determined not to publish it. His motto became: "Bene vixit, bene qui latuit." In the summer of 1635, he announced to Mersenne that he had separated the Dioptrics from

his treatise *Le monde* and was disposed to publish the former. In November, 1635, he had decided to add to the *Dioptrics* another chapter of the *Le monde*, the *Météores*, and to write a preface. The preface developed into the *Discours de la méthode*, and was completed by March, 1636. To the *Dioptrics* and *Météores* was added the *Géometrie*. These three treatises, which followed the *Discours de la méthode*, were later entitled "Essais de cette méthode." The four were published anonymously in 1637 at Leyden. In 1638 the publication of *Le monde* was definitely abandoned, and Descartes turned his attention to medicine. The article discusses the correspondence to 1638, and in a postscript is added an inquiry into the amount of time spent on metaphysical problems in 1629, in which Pfeffer attempts to show that the figure 9 in the letter of April 15, 1630, should be amended to read 4. This would make the work on the metaphysics extend to the end of July, 1629, and would reconcile the letters of October 8, 1629, November 13, 1629, and April 15, 1630.

W. A. H.

Ueber Aufgabe und Methode in den Beweisen der Analogien der Erfahrung in Kant's Kr. d. r. V. ERNST VON ASTER. A. f. G. Ph., IX, 2, pp. 218-251; IX, 3, pp. 334-366.

In these two articles on problem and method in the proofs of the analogies of experience in the *Kr. d. r. V.*, von Aster states the general problem of epistemology in the Kantian philosophy and then examines its solution under the following rubrics: (1) Synthetic judgments *a priori* as an epistemological question; (2) Kant's solution of the question in reference to mathematical propositions; (3) the logical necessity of the fundamental propositions of the pure understanding in the *Kr. d. r. V.*; (4) conditions of the knowledge of reality; (5) the Transcendental *Æsthetic* as basis of the proof of the analogies [forms of pure perception]; (6) knowledge of reality and experience; (7) the notion of object [supplementary defence of the foregoing in reference to the thing-in-itself]; (8) deduction of the notion of the pure understanding and proofs of the analogies; (9) proofs of the separate analogies of experience. The purpose of the articles is to show how the proofs of the analogies depend on the Transcendental *Æsthetic* and Analytic. From the major premise: "The objects of experience are in space and time," the following conclusions are drawn: (1) A persistent substance underlies the objects of experience; (2) the objects, in so far as they occupy a point in time or are events in time, are subject to the law of causality; in so far as they are simultaneous, they are subject to the law of reciprocal action.

W. A. H.

PSYCHOLOGY.

Fortsetzung der 'psychologischen Streitpunkte.' IV. Zur Frage der geometrisch-optischen Täuschungen. V. Zur Psychologie der 'Annahmen.' THEODOR LIPPS. Z. f. Ps. u. Phys. d. Sinn., XXXI, 1, pp. 47-79.

In the 19th volume of the *Z. f. Ps. u. Phys. d. Sinn.*, Witasek showed, supposedly, that every theory which bases its explanation of geometrical-optical illusions on illusions of judgment was false. Lipps's theory is of this sort. Witasek's argument rested partly on epistemological considerations, and partly on experimental evidence. Benussi, in the 29th volume of the same journal, has furnished additional experimental evidence for the refutation of L.'s theory. In the present paper, L. replies to both the epistemological and experimental objections. Some geometrical illusions are illusions of form, some of direction. What, then, are direction and form? But first, What is a line? W. answers that a line is *seen*. L. says that it is not seen; all that is seen is one's visual field; the line is contained in it implicitly; it becomes explicit by an act of apperception. Nor is straightness seen; it is a mark of the apperceived line, and it depends on the judgment of the relation of the line to right and left. Since W. and B. considered only illusions of direction, the question now becomes, What is direction? or, more particularly, What are verticality, horizontality, and obliquity? W. says that verticality comes from the impressions occupying a certain position on the retina. L. answers this, saying that he may move his head until the impressions of a vertical line fall on the same place on the retina as those of an oblique line, although the line still appears vertical. L.'s answer to the whole question of direction is that, as straightness depends on relations to a right and a left, so verticality, horizontality, and obliquity depend on an absolute right and left, an above and below, with reference to one's body. The straightness and direction of a line, therefore, cannot be given in perception; but judgments of relation are necessary. L. now puts his own construction on three experiments which W. and B. directed against his theory. If a horizontal line is crossed by an oblique line at an angle of 45° , it stands in equilibrium between horizontality and verticality. The question for the geometrical illusions is: Does the oblique line appear to tend toward the vertical or horizontal position? It apparently tends toward the vertical, because its obliquity consists in crossing the horizontal. For L. the crossing of the lines is the crucial point in the explanation of the Zöllner illusions. (1) Let a vertical line be crossed by one that is slightly oblique, but the obliquity of which is not sufficient to throw doubt on the verticality of the principal line. If this line be placed on a mirror, its image appears crossed in the opposite direction by the oblique line, and the two lines, real and image, appear crooked. L. explains this illusion on the ground that the reversal of direction of the

oblique line in the image emphasizes the obliquity of the crossing lines, hence the apparent deviation from the vertical. (2) In the second experiment, the principal line and the oblique are brought together by means of the stereoscope. The fusion of the two fields is not complete and the illusion does not appear. L. explains the failure of the illusion as due to the indistinctness of the crossing of the lines. (3) The third experiment is that brightness differences between the background and the lines enhances the illusion. L. interprets this experiment to mean that any condition which renders the crossing of the lines conspicuous, consequently enhances the illusion.

H. C. STEVENS.

A Study of the Relations between Mental Activity and the Circulation of the Blood. FREDERICK G. BONSER. Psych. Rev., X, 2, pp. 120-139.

The purpose of this paper is stated by the author as threefold. (1) To determine the changes in circulation during pleasant and unpleasant affective states under conditions of mental activity and fatigue. (2) To determine the correlation of the processes of intellection with changes in circulation. (3) To determine the relation of Traube-Hering waves to fluctuations of attention. The stimuli for the affective and intellectual states were odors, and mathematical problems and memorization, respectively. Changes in circulation were recorded by an air plethysmograph and by a sphygmograph. In the case of affective reactions, the author found that all stimuli, whether pleasant or unpleasant, gave constriction either immediately or after a slight dilation of the blood vessels. The results, in the case of intellectual reactions, were vaso-dilation invariably preceding vaso-constriction, and acceleration of heart-beat during the period of vaso-dilation. Prolonged intellectual activity lessened the amplitude of the pulse and increased blood pressure. The Traube-Hering waves correspond in length to the visual and auditory attention waves. The crest of the attention wave, however, corresponds with the trough of the vaso-motor wave.

H. C. STEVENS.

Direct Control of the Retinal Field : Report on Three Cases. GEORGE TRUMBULL LADD. Psych. Rev., X, 2, pp. 139-150.

The writer states his problem in the following sentence : " Can the sensations customarily called 'retinal,' which arise with the eyes closed and motionless, be made to respond to volition with respect to the form and color which they assume?" Experiments were made by sixteen students. Of these, four reported no success, nine were partially successful, and three were wholly successful. Of the three latter, two were able to vary both form and color at will ; the other observer was able to control the color of the image, but did not report on the form. The most common form was the circle ; but this might be changed to an ellipse, triangle, or cross. On the basis of these observations, L. concludes : (1) That the control of the form and color of visual images which appear in the closed eye grows by

practice. (2) That the phenomenon cannot be completely explained by selective attention. (3) That the strain of the eye muscles cannot account for the appearances. (4) That the colors and shapes of visual images are more centrally determined than has hitherto been supposed. (5) That these facts furnish evidence for the active, directive, and discriminating side of consciousness.

H. C. STEVENS.

Sur la mémoire affective. F. PAULHAN. Rev. Ph., XXVII, 12, pp. 545-569; XXVIII, 1, pp. 42-70.

It is possible to include in affective memory all the modifications which have been left in the mind by affective phenomena. But the present investigation is not to consider effects so completely systematized that they produce no emotion, nor is it to consider effects which have been so little systematized that they are lost. Purely intellectual memory of emotional states is also to be left out of the present discussion. This article deals with memory which recalls affective facts with their affective character. The statements of Rousseau, Restif de la Bretonne, and Taine prove the reality of affective memory. Some deny that the emotion which accompanies the idea of a previous affective state is a real revival. The partisans of affective memory say that affections are revived in the same sense that ideas are revived. Mauxion distinguishes false from true affective memory. In the latter, the revival of the emotion is not preceded by the revival of images which explain it. We cannot make this distinction absolute. Memory should not be contrasted with reconstruction but with organization. When well systematized by the mind, affective or intellectual phenomena appear to us as the result of spontaneous activity of the self. The greater part of our opinion and knowledge is not considered as memory, but is completely united with our mental life. Thus the feeling of affection, when thinking of a friend, seems to be the natural reaction of the mind, and is not regarded as the return of an earlier emotion. True affective memories are feelings which are no longer systematized with an actual self. When an opinion or a feeling separates from our mental organization, and associates itself again with the elements it discarded when it entered that organization, we have, in the one case, intellectual, and in the other case, affective memory. We need not demand in proof of affective memory a case where intellectual phenomena do not accompany or precede affective phenomena. Each class of phenomena influences the other, and both classes are signs which reveal a more profound reality to consciousness. All memory involves both intellectual and affective elements, but there are many instances in which the latter are dominant. The ideal of memory is an exact reproduction of past reality, but fortunately it is not attained. Affective memory varies both in intensity and in purity, and these attributes mutually influence each other. One observer finds that the memory of agreeable emotions grows gradually feebler but rarely entirely fades away, while the memory of disagreeable emotions grows stronger, reaches a maximum, then finally

disappears. The lack of purity in emotion depends upon the complexity of circumstances. Memory tends to inhibit the discordant elements. Systematic association and inhibition are the principles which explain the increased intensity of feeling and the decreased intensity of the memory image. Affective memory may or may not provoke a hostile reaction. It is often transformed by actual dispositions. Involuntary occurrence is no proof of its fidelity to the past reality ; disparity with the present emotional life is an indication of accuracy. Progressive transformation into the mental organization constitutes the chief utility of memory. But the unorganized affective memory has a practical use. By its cultivation we subordinate to our will portions of the mental life that are too independent, since the individual character of the emotion is destroyed by a reflective recall. Association by contiguity is a valuable means of securing a desired emotion. Affective memory has its dangers ; it may stimulate too much the independence of the psychical elements. Turning to sociology, we find analogies of affective memory, *e. g.*, renaissances and anniversaries. Affective memory also plays a part in history and in art.

G. W. T. WHITNEY.

The Affective Quality of Auditory Rhythm in its Relation to Objective Forms. R. MACDOUGALL. *Psych. Rev.*, X, 1, pp. 15-36.

The objective factors upon which the character and intensity of the pleasure in a rhythmical sequence depend, may be summed up under the following heads. (1) 'The objective rate and intensity of succession among the elements of the rhythmical sequence.' The character of the pleasurable impression varies with every change of rate of succession ; but it cannot be said that the agreeable impression increases or decreases as the speed rises or falls, though certain elementary factors of it do so. Slow and simple rhythms may be preferred to the more rapid and complex. The influence of absolute rate can be interpreted only in connection with other simultaneous variants. (2) 'The absolute intensity of these constituent elements (whether auditory or reactionary).' Intensive variations are less significantly related to the æsthetic impression produced by the rhythm than are changes in absolute rate. In extreme ranges of intensity, the effect is most marked. (3) 'The relation of the absolute rate to the prevailing emotional mood of the moment.' The *tempo* must be congruous with the normal rate and intensity of the motor discharge of the subject at the time, in order to be pleasing. It is the naked quality of the rhythm which is momentarily pleasing or displeasing, not that of the associations brought to mind. The capacity of the rhythm to please depends on the relation of the attention needed to apprehend it, to our stock of vigor at the moment. (4) 'The number of elements of which the rhythmical unit is composed.' Increase in the number of such elements makes the sequence gay, light, etc.; decrease in the number renders it solemn or noble, but the simplicity or complexity of the rhythmical structure must be coördinated with this

number. The position and intensive relations of accentuation are also important. Dipodic structures are sprightlier than simple sequences, short and common meters than long meter. (5) 'The structural complexity of the rhythmic unit as dependent upon the differentiation of its components.' The satisfaction afforded by the rhythmical sequence depends upon a process of individualization that penetrates every part of its structure and gives to each element a functional uniqueness. This differentiation marks the temporal, as well as the intensive, aspects of the series. It cannot be observed by introspection, but its presence imparts character to the rhythm. (6) 'The proportion of the various temporal and intensive values within the rhythmical unit.' These differentiations are not made at random, but must be in definite proportion to produce pleasure. Three factors are involved in this proportion: intensity, duration, and position, with their interrelations. The author has proved by experiment that æsthetically agreeable rhythmical forms are characterized by non-uniformity in the values of their constituent intervals. Those types are preferred in which the interval following the accented element exceeds that which follows the unaccented. The appreciation of forms in which this relation is reversed shows more irregularity. (7) 'The form of succession which the elements of the unit group presents.' This form is of fundamental importance. We cannot read a series in reverse order and get the same æsthetic effect as in the correct reading. The author describes this fact as due to the melodic relations of a series of strain experiences. Each note is dependent upon the preceding and succeeding tones for its æsthetic quality. Further, the two series of values, intensive and temporal, influence each other at every point. (8 and 9) 'The temporal and intensive differentiation of successive groups and their combination into higher rhythmical unities.' The unbroken series of a typical figure is monotonous, and there is a strong tendency to vary such a succession by the creation of larger figures. This is shown by the author's experiments. Two secondary factors of æsthetic pleasure enter as inseparable elements into every concrete experience of rhythm, viz., musical quality and capacity for arousing secondary associations. Delight is increased by the richness and purity of tones, by their functional connection with other tones in a melody, and by the combination of tones in harmonies. The forms of secondary association are emotional and intellectual. The emotions aroused are not sensuous, but are evoked through the ideas awakened by the melody. The intellectual side is seen in poetry. The formal perfection of the rhythm is constantly broken by the demands of the laws of logical arrangement.

R. B. WAUGH.